HILCORP ENERGY COMPANY

**HATTER'S POND GAS PRODUCTION, TREATING, & PROCESSING FACILITY**

MOBILE COUNTY, AL

FACILITY NO.: 503-4004

# MAJOR SOURCE OPERATING PERMIT
# THIRD TITLE V RENEWAL
DRAFT

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# STATEMENT OF BASIS

The proposed third Title V Major Source Operating Permit (MSOP) Renewal is issued under the provisions of ADEM Admin. Code r. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans, and other documents attached hereto or on file with the Air Division of Alabama Department of Environmental Management, in accordance with the terms and the conditions of this permit.

Hilcorp Energy Company (Hilcorp) obtained the Hatter's Pond Plant from Four Star Oil and Gas Company (Four Star) and was issued a modified version of the existing MSOP on May 10, 2016. Four Star was issued the existing MSOP on May 30, 2012 with an expiration date of April 23, 2017. Per ADEM Rule 335-3-16-.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more that eighteen (18) months, before the date of expiration for the permit. The renewal application was submitted to the Department in a timely manner on October 21, 2016. Updated application forms were submitted on June 20, 2017. The proposed MSOP will expire on **DATE.**

## PROCESS DESCRIPTION

Condensate laden sour gas is produced and gathered from nearby gas wells located in the Hatter's Pond gas field. Upon entering the facility, the sour field gas is separated from the liquids (i.e. condensate and water) in parallel trains of high (serving high-pressure wells), intermediate (serving intermediate-pressure wells), and low pressure (serving low-pressure wells) three-phase (i.e. gas, condensate, water) gas-liquid separators. Sour gas leaving the separators is then sent to low pressure (LP), intermediate pressure (IP), and high-pressure (HP) gas systems; these systems correspond to the well pressure.

The LP gas is compressed and routed to the IP gas system. The IP gas is sweetened in the IP amine contactor towers, and the HP gases are sweetened in the high pressure amine contactor. The intermediate pressure gases are compressed and combined with the high pressure gases prior to entering the glycol contactor. The combined sweetened, high-pressure wet gas then goes through a triethylene glycol (TEG) dehydration unit, which decreases the water content and/or the freezing temperature of the gas stream. The sweet, dried gas is then chilled.

The residue gas is sent to sales or gas lift compressor(s), and the natural gas liquids are sent to the fractionation unit, where the liquid stream is separated into a propane, butane and pentane mix. The sweet gas leaving the de-ethanizer is compressed and is either sent to a natural gas pipeline for sales or used for gas lifting the wells. The gases exiting the condensate stabilizer go to the IP gas system for sweetening and compression. In the rich amine flash tank, gases are sweetened and are sent to the plant fuel system.

The impure amine leaving the amine contacting towers is sent to the amine regeneration tower for purification. Gas driven off of the rich amine in the regeneration process (i.e. acid gas) is sent to a thermal oxidizer for combustion.

The condensate exiting the high, intermediate, and low-pressure separators passes through a stabilizer to lower the vapor pressure of the condensate stream. The condensate is then sent to storage while awaiting pipeline sales. Tank vapors are recompressed with a VRU and are utilized as plant fuel.

Water leaving the inlet three phase separators and the condensate separators are sent to the gas/condensate/water separation system where any gas or condensate that may have remained in the water is separated from the water. All gases are routed to the main facility flare for combustion. The condensate is sent to condensate storage. The water is sent to gas blanketed storage tanks prior to being disposed of.

Heat is provided by two (2) 48 MMBtu/hr process heaters.

## Equipment List

The Hatter's Pond Plant is currently equipped with the following equipment:

Significant

- Two (2) 48 MMBtu/hr Process Heaters
- Two (2) 1,626 BHP, 4-SRB, Combination Compressor Engines
- Two (2) 660 BHP, 2-SLB, Inlet Compressor Engines
- 2,700 BHP, 2-SLB, Combination Compressor Engine
- 2,600 BHP, 4-SLB, Injection Compressor Engine
- 1,665 BHP, 4-SLB, Inlet Compressor Engine
- 1,642 BHP, 4-SLB, Inlet Compressor Engine
- 377 BHP, 4-SLB, Lift Gas Engine
- 111 BHP, CI, Air Compressor Engine
- 91 BHP, CI, Fire Water Pump Engine
- 230 BHP, 4-SRB, Emergency Generator Engine w/ NSCR
- 1,680 BHP, 4-SRB, Compressor Engine w/ NSCR
- Triethylene Glycol Dehydration Unit
- Two (2) 1,500 bbl Produced Water Storage Tanks
- Two (2) 426,000 Gallon Condensate Storage Tanks
- Thermal Oxidizer
- Process Flare
- Backup Flare

Insignificant

- A list of all insignificant activities can be found in the Title V renewal application.

## NOTABLE CHANGES

Hilcorp has made a request to modify its existing Major Source Operating Permit (MSOP).

This renewal will address the following changes:

1. Applicability of the area source requirements under 40 CFR part 63, subpart ZZZZ for remote stationary engines.
    a. The engines >500 BHP meet the definition for remote stationary RICE under subpart ZZZZ. This definition was promulgated after the current Title V permit was issued.

# FACILITY-WIDE EMISSION REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| Petroleum Production - Facility that handles natural gas containing 0.10 grains of $H_2S$/scf | $H_2S$ | Burn gas<br>20 ppbv offsite concentration | Rule 335-3-5-.03(1)<br>Rule 335-3-5-.03(2) |
| Onshore Natural Gas Processing Plants<br>All affected facilities:<br>Compressors in VOC or wet gas service<br>Group of equipment in process unit<br>Dehydration units<br>Sweetening units<br>NGL unit | VOC | LDAR work practices | 40 CFR 60 Subpart KKK |
| All sources within a contiguous area and under common control which emits or may emit hazardous air pollutants. | VHAP | ≤9.9 TPY for individual HAP<br>AND<br>≤24.9 TPY for all HAPs | 40 CFR 63 Subpart HH MACT Avoidance for Major Source of HAPs |
| Tri-ethylene Glycol (TEG) Dehydration Unit | Benzene | <0.9 megagrams per year | 40 CFR 63.764(e)(ii)<br>40 CFR 63 Subpart HH |

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-5-.03(2) *"Petroleum Production"-Control of Sulfur Compounds*

**Applicability:**

ADEM Admin. Code r. 335-3-5-.03(2) states that all process streams containing at least 0.10 grains of hydrogen sulfide ($H_2S$) per SCF [~162 ppmv] shall be burned such that the offsite $H_2S$ concentration is 20 ppbv or less, as averaged over a 30-minute period. The flare and sulfur recovery unit (SRU) / thermal oxidizer would be subject to this regulation. The specific monitoring and recordkeeping requirements will be discussed in the flare and Thermal Oxidizer sections.

### ADEM Admin. Code r. 335-3-14-.04, "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

This facility is a major source for PSD. In order for the facility to maintain its status as a grandfathered source with respect to PSD, it would be required not to exceed the significant emission rates found in Rule 335-3-14-.04(2)(w) for each new project at an existing major

stationary source.

## ADEM Admin. Code r. 335-3-16-.03, "*Major Source Operating Permits" (MSOP)*

**Applicability:**

The facility has been deemed a major source of criteria pollutants under this regulation since the sulfur dioxide ($SO_2$), nitrogen oxide ($NO_X$), carbon monoxide (CO), and volatile organic compound (VOC) emissions from the facility have the potential to exceed the 100 TPY threshold for criteria pollutants. However, the facility would not be a major source of hazardous air pollutants (HAPs) because the HAP emissions are not expected to exceed the 10 TPY threshold for a single HAP or the 25 TPY threshold for a combination of HAPs. The facility would be an area source with respect to HAP emissions.

### FEDERAL REGULATIONS

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

## 40 CFR 60 Subpart A, "*General Provisions*"

**Applicability:**

Provided that the facility is subject to one of the applicable subparts found under this part, the facility shall comply with this regulation as specified in that subpart.

## 40 CFR 60 Subpart KKK, *"Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants" [NSPS KKK]*

**Applicability:**

This facility is subject to this subpart because it is a natural gas processing plant for which modification commenced after January 20, 1984. Affected facilities under this regulation include compressors in VOC service or in wet gas service (§60.630(a)(2)) and the group of all equipment within a process unit (§60.630(a)(3)). Equipment would be defined in this subpart as pumps, pressure relief devices, open-ended valve or line, valve, compressor (except reciprocating compressors in wet gas service (§60.633(f)), and flanges or other connectors that are in VOC service or wet gas service. The facility's dehydration units, condensate stabilization unit, sweetening unit, field gas gathering system, salt water separation unit, and NGL extraction unit are also be covered by this subpart (§60.630(e)).

**Emission Standards:**

The emission standards found in §60.632 shall be met, except as provided in §60.633. The emissions standards for subpart KKK refer to 40 CFR part 60, subpart VV, "*Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry*."

**Compliance and Performance Test Methods and Procedures:**

Test methods and procedures specified in §60.485, except as specified in §60.333(f), shall

be used to demonstrate compliance with the emission standards.

**Emission Monitoring:**

Inspection and monitoring requirements are specified in §60.482-1 through §60.482-10 of subpart VV. Alternative methods of monitoring valves may be elected as specified in either 40 CFR 60.483-1 or §60.483-2 of subpart VV (40 CFR 60.632(a) & (b) of subpart KKK).

**Recordkeeping and Reporting Requirements:**

Recordkeeping requirements shall be met by complying with §60.486 of subpart VV as specified in §60.635 of subpart KKK.

Reporting requirements shall be met by complying with §60.487 of subpart VV as specified in §60.636 of subpart KKK.

A Leak Detection and Repair (LDAR) summary report shall be submitted to the Department on a semiannual basis.

### 40 CFR 60 Subpart OOOO, *"Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution" [NSPS OOOO]*

**Applicability:**

This facility is not subject to this subpart because there are no affected sources at this facility as defined in §60.5365 since the facility has not undergone construction, modification or reconstruction after August 23, 2011.

### 40 CFR 60 Subpart OOOOa, *"Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution" [NSPS OOOOa]*

**Applicability:**

This facility is not subject to this subpart because there are no affected sources at this facility as defined in §60.5365a since the facility has not undergone construction, modification or reconstruction after September 18, 2015.

## NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)

### 40 CFR 63 Subpart A, *"General Provisions"*

**Applicability:**

Provided that the facility is subject to one of the applicable subparts found under this part, the facility shall comply with this regulation as specified in that subpart.

## 40 CFR 63 Subpart HH, *"National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities" [Oil and Gas MACT]*

### Applicability:

The Hatter's Pond facility processes natural gas prior to the point of custody transfer, and the facility is defined as an area source of HAPs due to compliance with a facility-wide HAP limit. Hatter's Pond is an area source of HAPs since it does not meet the definition of a major source of HAPs as defined in 40 CFR 63.761. In order for this facility to be subject to the applicable area source requirements of this subpart, it is required to have an affected source. An affected source for area sources of HAPs would include each tri-ethylene glycol (TEG) dehydration unit. Since the facility is equipped with a TEG dehydration unit, it is subject to the applicable requirements under this subpart.

### Emission Standards:

The facility-wide HAP emissions shall not exceed 9.9 tons per any twelve (12) consecutive month period for each of the following: benzene, ethyl benzene, toluene, xylene, n-hexane, methanol, and formaldehyde. The total facility-wide HAP emissions shall not exceed 24.9 tons per any twelve (12) consecutive month period. This limit was taken to remain an area source with respect to this subpart.

The actual average benzene emissions from the TEG dehydration unit process vent shall not exceed 0.9 megagrams per year.

### Compliance and Performance Test Methods and Procedures:

To demonstrate compliance with the facility-wide HAP emissions standards, the following requirements must be met:

- For fuel gas combustion sources, the fuel gas shall be analyzed for its Btu content utilizing ASTM Analysis Method D1826-77 or an equivalent method.
- For fuel gas combustion sources, the HAP pollutant emissions factors shall be found in the latest stack test for the make and model of combustion device, the latest EPA "AP-42" publication, GRI-HAPCalc™ Version 3.0 or greater, GRI-HAPData™ Version 1.0 or greater or other Departmental approved sources.
- A compositional gas analysis shall be performed on the acid gas entering the thermal oxidizer and the gas entering the glycol-contacting tower.
- For the TEG dehydration unit, HAP emissions shall be determined utilizing the latest stack test, GRI-GLYCalc™ Version 3.0 or greater computer model or other Departmental approved sources.
- Equipment fugitive HAP emissions shall be determined in accordance with the methods and procedures specified in the latest EPA protocol (i.e. EPA-453/R-95-017 document) for making such estimates and as speciated relative to the HAP composition of the respective process stream.

To demonstrate compliance with the TEG dehydration unit benzene emissions standard, one of the following requirements must be met:

- Determine the actual average benzene emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual.
- Determine the average mass rate of benzene emissions in kilograms per hour (kg/hr) through direct measurement using Method 18 of 40 CFR part 60, appendix A OR ASTM D6420-99(2004), Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry (incorporated by reference- see §63.14)

**Emission Monitoring:**

For combustion devices, the fuel gas Btu heat content shall be determined on a monthly basis. Each applicable process gas stream shall be tested for HAP content at least once every six (6) months.

**Recordkeeping and Reporting Requirements:**

The following records shall be maintained: fuel gas combustion, acid gas flow into thermal oxidizer, TEG dehydration unit feed rate, monthly fuel gas Btu content, monthly HAP emissions, and actual average benzene emissions from the TEG dehydration unit.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

This subpart is applicable to an emission source provided the source meets the following criteria: it is subject to an emission limit or standard, it uses a control device to achieve compliance with the emissions limit or standard, and it has pre-controlled emissions from a regulated air pollutants that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source [40 CFR 64.2(a)]. The flare, thermal oxidizer, and engines equipped with NSCR are subject to the requirements of this subpart. Compliance with this subpart is discussed in the individual sections for the units.

## FACILITY-WIDE EMISSIONS

Facility wide actual emissions were obtained from the most recent emissions inventory (2016).

| FACILITY WIDE EMISSIONS (TPY) | | | | | |
|---|---|---|---|---|---|
| PM | $SO_2$ | $NO_X$ | CO | VOC | Total HAPs |
| 2.06 | 162 | 134 | 127 | 75.5 | 7.02 |

# PROCESS HEATER REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| Two (2) 48 MMBtu/hr, Gas-Fired Heaters (Heater No. 1 and No. 2) | $SO_2$ | 1.8 lb/MMBtu | Rule 335-3-5-.01(1)(a) |
| | PM | 0.25 lb/MMBtu | Rule 335-3-4-.03(1) |
| | Opacity | No more than one 6 min avg. > 20% | Rule 335-3-4-.01(1)(a) |
| | | AND | |
| | | No 6 min avg. > 40% | Rule 335-3-4-.01(1)(b) |

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-4-.01(1)(a) and (b), "*Visible Emissions*" for Control of Particulate Emissions

**Applicability:**

The process heaters would be subject to the requirements of this regulation.

**Emissions Standards:**

ADEM Admin. Code r. 335-3-4-.01(1)(a) states that except for one 6-minute period during any 60-minute periods, stationary emission sources shall not discharge into the atmosphere particulate that results in an opacity greater than 20%, as determined by a 6-minute average.

ADEM Admin. Code r. 335-3-4-.01(1)(b) states that at no time shall a stationary emission source discharge into the atmosphere particulate that results in an opacity greater than 40%, as determined by a six minute average.

**Compliance and Performance Test Methods and Procedures:**

If visible emissions are observed in excess of the standards from the process heaters, Method 9 or Method 22 found in 40 CFR part 60, appendix A would be used to demonstrate compliance with the opacity standards.

**Emissions Monitoring:**

A daily visual inspection of the heaters is required provided that the facility is manned by plant personnel. If visible emissions are observed from these units in excess of the standards, a visible emissions observation (VEO) would be required.

**Recordkeeping and Reporting Requirements:**

A record of each daily visual inspection and VEO conducted shall be maintained.

## ADEM Admin. Code r. 335-3-4-.03(1), "*Fuel Burning Equipment*" for Control of Particulate Emissions

**Applicability:**

The process heaters would be subject to the requirements of this regulation.

**Emissions Standards:**

Mobile County is considered a Class 1 County under this regulation. Therefore, the process heaters are subject to particulate emissions limits given by the following equation:

$$\mathbf{E} \text{ (emissions in lb/MMBtu)} = 1.38 * \mathbf{H} \text{ (heat input in MMBtu/hr)}^{-0.44}$$

Based on this equation, the PM limit for each process heater would be 0.25 lb/MMBtu.

**Compliance and Performance Test Methods and Procedures:**

To demonstrate compliance with the PM emissions standard, the heaters shall only burn natural gas.

**Emissions Monitoring:**

No monitoring is required regarding this regulation.

**Recordkeeping and Reporting Requirements:**

No records are required to be maintained.

## ADEM Admin. Code r. 335-3-5-.01(1)(a), "*Fuel Combustion*" for Control of Sulfur Compound Emissions

**Applicability:**

The process heaters would be subject to the requirements of this regulation.

**Emissions Standards:**

Mobile County is considered a Sulfur Dioxide Category I County. Therefore, the process heaters are limited to 1.8 lb/MMBtu of sulfur dioxide emissions.

**Compliance and Performance Test Methods and Procedures:**

To demonstrate compliance with the emissions standards for the process heaters, the following requirements must be met:

- Heaters No. 1 and No. 2 fuel gas shall be analyzed for its Btu content utilizing ASTM

Analysis Method D1826-77 or an equivalent method.

- Heaters No. 1 and No. 2 fuel gas shall be tested for $H_2S$ using the Tutwiler procedures found in §60.648 OR the chromatographic analysis procedures found in ASTM E-260 OR the stain tube procedures found in GPA 2377-86 or those provided by the stain tube manufacturer.

**Emissions Monitoring:**

The fuel gas shall be tested for its Btu content and $H_2S$ content at a frequency of no less than once every six (6) months.

**Recordkeeping and Reporting Requirements:**

The following monthly records should be maintained for the process heaters: deviations, Btu and $H_2S$ content, and $SO_2$ emissions.

## ADEM Admin. Code r. 335-3-14-.04, "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

There are no Anti-PSD or PSD limits on the heaters at this time.

### FEDERAL REGULATIONS

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

## 40 CFR Part 60 Subpart $D_C$, "*Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*" *[NSPS $D_C$]*

**Applicability:**

This subpart is applicable to steam generating units constructed, reconstructed, or modified after June 9, 1989 that have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. These heaters were constructed before June 9, 1989 and have not been modified. Therefore, the heaters would not be subject to this subpart.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)

## 40 CFR 63 Subpart DDDDD, *"National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters" [Boiler MACT]*

**Applicability:**

This subpart was promulgated on March 21, 2011 and is applicable to new, reconstructed, and existing industrial, commercial, or institutional boilers or process heaters located at a

major source of hazardous air pollutants (HAPs) [40 CFR 63.7485]. This facility does not have the potential to emit 10 tons per year (TPY) or more of a single HAP or 25 TPY or more of a combination of HAPs. Therefore, the heaters are not subject to this subpart.

## 40 CFR 63 Subpart JJJJJJ, *"National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers"*

**Applicability:**

This subpart is applicable to new, reconstructed, and existing industrial, commercial, or institutional boilers located at an area source of hazardous air pollutants (HAPs) [40 CFR 63.11193]. This facility is an area source of HAP emissions. However, "process heaters" are excluded from the definition of "boiler" in §63.11237. Therefore, the heaters would not be subject to this subpart.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

The heaters are required to comply with emissions standards. However, they are not equipped with a control device and the emissions from the units would not exceed a major source threshold. Therefore, the heaters would not be subject to the requirements of this subpart.

### PROCESS HEATER ACTUAL EMISSIONS

| PROCESS HEATER EMISSIONS (2016) | | | | | | |
|---|---|---|---|---|---|---|
| EMISSION SOURCE | (TPY) | | | | | |
| | PM | $SO_2$ | $NO_X$ | CO | VOC | TOTAL HAP |
| Heater No. 1 | 0.89 | 0.00 | 11.7 | 9.84 | 1.02 | 0.00 |
| Heater No. 2 | 0.88 | 0.00 | 11.6 | 9.72 | 1.01 | 0.00 |
| TOTAL | 1.77 | 0.00 | 23.3 | 19.6 | 2.03 | 0.00 |

# ENGINE REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| (2) 1,626 BHP, Gas-Fired, 4-Stroke Rich Burn ICE w/ NSCR Compressor Engines (1626IR-A & 1626IR-B) | $NO_X$ | 28.1 lbs/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | VOC | 6.0 lbs/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | CO | 15.5 lbs/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 11) 40 CFR 63 Subpart ZZZZ |
| (1) 2,700 BHP, Gas-Fired, 2-Stroke Lean Burn ICE Combo Compressor Engine (2700CB) | $NO_X$ | 17.8 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | VOC | 8.9 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | CO | 9.5 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 6) 40 CFR 63 Subpart ZZZZ |
| (1) 2,600 BHP, Gas-Fired, 4-Stroke Lean Burn ICE Injection Compressor Engines w/ NSCR (2600IR-A) | $NO_X$ | 12.6 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | VOC | 6.8 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | CO | 12.6 lb/hr | Rule 335-3-14-.04 [PSD/BACT] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 8) 40 CFR 63 Subpart ZZZZ |
| (1) 1,665 BHP, Gas-Fired, 4-Stroke Lean Burn ICE Inlet Compressor Engine (1665C) | $NO_X$ | 9.1 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |

| | | | |
|---|---|---|---|
| | VOC | 9.1 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | CO | 22.8 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 8) 40 CFR 63 Subpart ZZZZ |
| (1) 1,642 BHP, Gas-Fired, 4-Stroke Lean Burn ICE Inlet Compressor Engine w/ NSCR (1642W) | $NO_X$ | 9.1 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | CO | 22.8 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 8) 40 CFR 63 Subpart ZZZZ |
| (2) 660 BHP, Gas-Fired, 2-Stroke Lean Burn ICE Inlet Compressor Engines (660CB-A & 660CB-B) | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 6) 40 CFR 63 Subpart ZZZZ |
| (1) 377 BHP, Gas-Fired, 4-Stroke Lean Burn ICE Lift Gas Engine w/ NSCR (377C) | $NO_X$ | 1.5 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | VOC | 1.0 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | CO | 2.6 lb/hr | Rule 335-3-14-.04 [Anti-PSD] |
| | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 7) 40 CFR 63 Subpart ZZZZ |
| (1) 1,680 BHP, Gas-Fired, 4-Stroke Rich Burn ICE Compressor Engine w/ NSCR (1680W) | $NO_X$ | 2.0 g/HP-hr (160 ppmvd @ 15% $O_2$) | §63.4233(e) Table 1, 40 CFR 60 Subpart JJJJ |
| | VOC | 1.0 g/HP-hr (86 ppmvd @ 15% $O_2$) | §63.4233(e) Table 1, 40 CFR 60 Subpart JJJJ |
| | CO | 4.0 g/HP-hr (540 ppmvd @ 15% $O_2$) | §63.4233(e) Table 1, 40 CFR 60 Subpart JJJJ |

| | | | |
|---|---|---|---|
| (1) 230 BHP, LPG-Fired, 4-Stroke Rich Burn ICE Emergency Generator Engine w/ NSCR (42-230A) | $NO_X$ | 1.18 g/HP-hr (0.599 lb/hr) | §63.4231(c) 40 CFR 60 Subpart JJJJ |
| | VOC | 0.03 g/HP-hr (0.152 lb/hr) | §63.4231(c) 40 CFR 60 Subpart JJJJ |
| | CO | 1.56 g/HP-hr (0.791 lb/hr) | §63.4231(c) 40 CFR 60 Subpart JJJJ |
| (1) 91 BHP, Diesel-Fired Fire Pump Driver Engine (Caterpillar Backup Fire Water Pump) | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 1) 40 CFR 63 Subpart ZZZZ |
| (1) 111 BHP, Diesel-Fired Air Compressor Engine (Ingersoll Rand Air Compressor) | HAPs | Work Practice Standards | §63.6603(a) Table 2d (No. 1) 40 CFR 63 Subpart ZZZZ |
| ALL ENGINES | Opacity | No more than one 6 min avg. > 20% AND | Rule 335-3-4-.01(1)(a) |
| | | No 6 min avg. > 40% | Rule 335-3-4-.01(1)(b) |

There is one notable change to the engine requirements section:

1. Engine Nos. 2700CB, 2600IR-A, 1626IR-A, 1626IR-B, 1665C, and 1642W meet the definition for remote stationary RICE under subpart ZZZZ.
    a. Per §63.6675, a stationary RICE not located on a pipeline segment is remote if there are 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine.
    b. Hilcorp submitted an aerial diagram of the facility that included a quarter mile radius drawn from the location of each applicable engine. This diagram shows that there are no buildings intended for human occupancy within a 0.25 radius of each engine.
    c. These engines will be designated as remote stationary RICE. The new requirements for these engines will be discussed in this section.

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-4-.01(1)(a) and (b), "*Visible Emissions*" for Control of Particulate Emissions

**Applicability:**

The engines would be subject to the requirements of this regulation.

**Emissions Standards:**

ADEM Admin. Code r. 335-3-4-.01(1) (a) states that except for one 6-minute period during any 60-minute periods, stationary emission sources shall not discharge into the atmosphere particulate that results in an opacity greater than 20%, as determined by a 6-minute average.

ADEM Admin. Code r. 335-3-4-.01(1)(b) states that at no time shall a stationary emission source discharge into the atmosphere particulate that results in an opacity greater than 40%, as determined by a six minute average.

**Compliance and Performance Test Methods and Procedures:**

If visible emissions are observed in excess of the standards from the engines, Method 9 or Method 22 found in 40 CFR part 60, appendix A would be used to demonstrate compliance with the opacity standards.

**Emissions Monitoring:**

A daily visual inspection of each engine is required provided that the facility is manned by plant personnel and the unit is operating. If visible emissions are observed from these units in excess of the standards, a visible emissions observation (VEO) would be required.

**Recordkeeping and Reporting Requirements:**

A record of each daily visual inspection and VEO conducted shall be maintained.

## ADEM Admin. Code r. 335-3-14-.04, .08(a) and (b), and .09(a) and (b), "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

Anti-PSD limits have been placed on the (2) 1,626 BHP, 1,665 BHP, 1,642 BHP, and 377 BHP engines. BACT limits have been placed on the 2,700 BHP and 2,600 BHP engines.

**Emissions Standards:**

Refer to the table at the top of the Engine Requirements section.

**Compliance and Performance Test Methods and Procedures:**

To demonstrate compliance with the emissions standards for the engines, the following requirements must be met:

- The engines shall be tested for $NO_X$ emissions using EPA 40 CFR part 60, appendix A, Method 7, 7A, 7B, 7C, 7D, or 7E OR another methodology approved by the Department.
- The engines shall be tested for VOC emissions using EPA 40 CFR part 60, appendix A, Method 18, 25, 25A, 25B, 25C, 25D, or 25E OR another methodology approved by the Department OR EPA's Conditional Test Method (CTM-034) and Methods 18 and 19 of part 60.

- The engines shall be tested for CO emissions using EPA 40 CFR part 60, appendix A, Method 10, 10A, or 10B OR another methodology approved by the Department.
- The engine fuel gas shall be analyzed for its Btu content utilizing ASTM Analysis Method D1826-77 or an equivalent method.
- The engine fuel gas shall be tested for $H_2S$ using the Tutwiler procedures found in §60.648 OR the chromatographic analysis procedures found in ASTM E-260 OR the stain tube procedures found in GPA 2377-86 or those provided by the stain tube manufacturer.

**Emissions Monitoring:**

The fuel gas volume for the engines shall be monitored with a system capable of continuously measuring and recording the flow rate and/or the parameters utilized for flow rate calculations.

A performance test shall be conducted on the engines at least once every five (5) years. A periodic test shall be performed once every twelve (12) months.

To demonstrate compliance with the emissions standards for the engines, the fuel gas must be tested once every six (6) months for its Btu and sulfur content. The fuel gas heat content, emission factors, fuel volume used, and operating hours will be utilized in monthly calculations of pollutant emissions.

The engines employ the use of non-selective catalytic reduction (NSCR) to control $NO_X$, CO, and VOC emissions. The facility must choose at least one of the following monitoring options: monitor the pressure drop across the catalyst bed weekly, monitor the temperature drop across the catalyst bed weekly, and/or monitor the $NO_X$ concentration in the catalytic converter exhaust gas weekly. In addition, the 1,680 BHP engine shall meet the following requirements: the $NO_X$ concentration in the exhaust shall be tested using a portable analyzer every 12 months.

**Recordkeeping and Reporting Requirements:**

The following monthly records should be maintained for the engines: deviations from the permit requirements, maintenance performed, fuel consumption, fuel gas Btu and $H_2S$ content, engine fuel heat input (MMBtu/Month), operating hours, and $NO_X$, CO, and VOC emissions (lb/month, lb/hr).

A Periodic Monitoring Report (PMR) that identifies each incidence of a deviation from a permit condition shall be prepared and submitted to the Department semi-annually on a calendar basis. The reports shall be received within 30 days of the end of the reporting period.

## FEDERAL REGULATIONS

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

### 40 CFR 60 Subpart A, "*General Provisions*"

**Applicability:**

Provided that the facility is subject to one of the applicable subparts found under this part, the facility shall comply with this regulation as specified in that subpart.

### 40 CFR 60 Subpart JJJJ, "*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*" *[NSPS JJJJ]*

**Applicability:**

NSPS JJJJ applies to stationary spark ignition internal combustion engines (ICE) constructed after June 12, 2006. The 1,680 BHP and 230 BHP engines would be subject to this subpart.

**Emissions Standards:**

Per §60.4233(e), the 1,680 BHP engine must comply with the emission standards in Table 1 of subpart JJJJ. Per §60.4233(c), the 230 BHP engine must be certified to meet the emission standards in 40 CFR part 1048. These standards can be found in the table at the beginning of the Engine Requirements section.

**Compliance and Performance Test Methods and Procedures:**

Per §60.4244(b), each performance test for the 1,680 BHP engine shall be conducted using the methods specified in Table 2 of subpart JJJJ. Each test shall follow the procedures specified in §60.4244(a) through (f).

**Emissions Monitoring:**

Per §60.4243(b)(2)(ii), a performance test shall be conducted on the 1,680 BHP engine every 8,760 hours or 3 years, whichever comes first. Per §60.4243(g), the air-to-fuel ratio controller on the 1,680 BHP engine must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

The 230 BHP engine shall comply with the requirements in §60.4243(a)(1) and (d).

**Recordkeeping and Reporting Requirements:**

The facility shall comply with the reporting requirements in §60.4245(a)(1)-(4).

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)

## 40 CFR 63 Subpart A, *"General Provisions"*

**Applicability:**

Provided that the facility is subject to one of the applicable subparts found under this part, the facility shall comply with this regulation as specified in that subpart.

## 40 CFR 63 Subpart ZZZZ, *"National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" [MACT ZZZZ]*

**Applicability:**

The engines are subject to MACT ZZZZ because they are existing stationary RICE located at an area source of HAPs. The 1,680 BHP and 230 BHP engines demonstrate compliance with MACT ZZZZ by complying with NSPS JJJJ.

Engine Nos. 2700CB, 2600IR-A, 1626IR-A, 1626IR-B, 1665C, and 1642W meet the definition of "remote stationary RICE" under §63.6675. These engines meet the third criteria in the definition: "Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine." The facility has included in the Title V application an aerial map of the facility illustrating compliance with this criterion.

The remote status of the remaining engines has no bearing on the regulatory applicability of these units because only engines with a max horsepower greater than 500 BHP have their requirements determined by remote or non-remote status.

**Emissions Standards:**

The (2) 1,626 BHP engines are subject to the work practice standards in Table 2d for non-emergency, non-black start 4SRB remote stationary RICE >500 BHP (No. 11).

The 2,600 BHP, 1,665 BHP, and 1,642 BHP engines are subject to the work practice standards in Table 2d for non-emergency, non-black start 4SLB remote stationary RICE >500 BHP (No. 8).

The 2,700 BHP and (2) 660 BHP engines are subject to the work practice standards in Table 2d for non-emergency, non-black start 2SLB stationary RICE (No. 6).

The 377 BHP engine is subject to the work practice standards in Table 2d for non-emergency, non-black start 4SLB stationary RICE ≤500 BHP (No. 7).

The 111 BHP and 91 BHP engines are subject to the work practice standards in Table 2d for non-emergency, non-black start CI stationary RICE ≤300 BHP (No. 1).

**Compliance and Performance Test Methods and Procedures:**

Each engine is subject to the work and management practice requirements in Table 6 (No. 9).

**Emissions Monitoring:**

Per §63.6605(b), at all times an affected source must be operated and maintained, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Each engine's time spent at idle during startup shall be minimized and the engine's startup time shall be minimized to a period needed for appropriate and safe loading of the engine as specified in §63.6625(h).

**Recordkeeping and Reporting Requirements:**

The facility shall comply with the recordkeeping requirements in §63.6655(a), (b), (d), and (e) and §63.6660. The facility shall comply with the reporting requirements in §63.6650 and Table 7 (No. 3) of subpart ZZZZ.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

The (2) 1,626 BHP, 2,600 BHP, 1,680 BHP, 1,642 BHP, and 230 BHP engines have emission limits for $NO_X$, CO, and VOC, use a control device (NSCR) to comply with the limits, and each engine's potential uncontrolled emissions are greater than 100 TPY for at least one criteria pollutant. Therefore, CAM requirements apply.

The facility must choose at least one of the following monitoring options: monitor the pressure drop across the catalyst bed weekly, monitor the temperature drop across the catalyst bed weekly, and/or monitor the $NO_X$ concentration in the catalytic converter exhaust gas weekly. In addition, the 1,680 BHP engine shall meet the following requirements: the $NO_X$ concentration in the exhaust shall be tested using a portable analyzer every 12 months.

The pressure and temperature differentials shall not exceed the manufacturer's maximum recommended pressure and temperature differentials. The $NO_X$ concentration in the catalytic converter exhaust gas shall not exceed the $NO_X$ concentrations from the latest performance test.

If more than 5 deviations occur during any semiannual reporting period, a Quality Improvement Plan shall be developed and implemented to ensure sufficient future catalyst performance.

## ENGINE ACTUAL EMISSIONS

| ENGINE EMISSIONS (2016) | | | | | | |
|---|---|---|---|---|---|---|
| EMISSION SOURCE | (TPY) | | | | | |
| | PM | $SO_2$ | $NO_X$ | CO | VOC | TOTAL HAP |
| (2) 1,626 BHP | 0.00 | 0.00 | 71.7 | 1.02 | 7.66 | 0.78 |
| 2,700 BHP | 0.00 | 0.00 | 11.0 | 6.28 | 5.06 | 0.66 |
| 2,600 BHP | 0.00 | 0.00 | 0.06 | 0.02 | 0.00 | 0.01 |
| 1,665 BHP | 0.00 | 0.00 | 4.63 | 0.19 | 0.74 | 1.17 |
| 1,642 BHP | 0.00 | 0.00 | 0.00 | 2.05 | 0.00 | 0.15 |
| (2) 660 BHP | 0.00 | 0.00 | 12.0 | 86.1 | 3.27 | 0.59 |
| 377 BHP | 0.00 | 0.00 | 0.08 | 0.08 | 0.04 | 0.00 |
| 1,680 BHP | 0.00 | 0.00 | 5.87 | 6.49 | 0.00 | 0.02 |
| 230 BHP | 0.00 | 0.00 | 1.09 | 1.44 | 0.28 | 0.00 |
| 111 BHP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 91 BHP | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| TOTAL | 0.00 | 0.00 | 106 | 104 | 17.1 | 3.38 |

# THERMAL OXIDIZER REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| Thermal Oxidizer (TO) | $H_2S$ | Burn gas with 0.10 grains $H_2S$/Scf<br>Offsite Concentration less than 20 ppbv | Rule 335-3-5-.03(2) |
| | $SO_2$ | Unlimited<br>(available sulfur less than or equal to 5LTons/day) | Rule 335-3-5-.03(3) |
| | Opacity | No more than one 6 min avg. > 20%<br>AND<br>No 6 min avg. > 40% | Rule 335-3-4-.01(1)(a)<br><br>Rule 335-3-4-.01(1)(b) |

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-4-.01(1)(a) and (b), *"Visible Emissions" for Control of Particulate Emissions*

**Applicability:**

The thermal oxidizer would be subject to the requirements of this regulation.

**Emission Standards:**

The thermal oxidizer would be required to comply with the 20%/40% state opacity standards specified in these subparts.

**Compliance and Performance Test Methods and Procedures:**

Method 9 or Method 22 found in 40 CFR 60, Appendix A would be used to demonstrate compliance with the opacity standards. When Method 22 is used to determine the duration of emissions, the method has to be conducted by an individual who is familiar with the procedures. When Method 9 is used to determine opacity, it has to be conducted by an individual who is certified to use this procedure. Visible emissions observations are required to be conducted during daylight hours.

**Emissions Monitoring:**

To comply with the opacity standards, the facility is required to conduct a daily visual

inspection of the thermal oxidizer for the presence or absence of visible emissions. Provided that visible emissions in excess of the opacity standards are observed during the daily inspections, a visible emission observation of the thermal oxidizer shall be conducted.

**Recordkeeping and Reporting Requirements:**

A record of each daily visible inspection and each occurrence when a visible emissions observation was conducted should be recorded and maintained. A deviation should be reported within 48 hours or 2 working days when a visible emissions event occurs.

## ADEM Admin. Code r. 335-3-5-.03 (1), (2) and (3), *"Petroleum Production"* for Control of Sulfur Compound Emissions

**Applicability:**

The thermal oxidizer would be subject to the requirements of these regulations since the facility handles natural gas that contains more than 0.10 grains of $H_2S$ per standard cubic foot (SCF) (~160 ppmv).

**Emission Standards:**

ADEM Admin. Code r. 335-3-5-.03(2) requires that all process gas streams containing greater than 0.10 grains/Scf of $H_2S$ shall be burned such that the offsite $H_2S$ concentration is 20 ppbv or less, as averaged over a 30-minute period. The thermal oxidizer is used to comply with this regulation. Compliance is indicated by limiting the $H_2S$ feed rate to less than or equal to 500 lb/hr.

ADEM Admin. Code r. 335-3-5-.03(3) requires that $SO_2$ emissions from a facility that is designed to dispose of or process natural gas containing more than 0.10 grains/Scf of $H_2S$ do not exceed the allowable limit based on the available sulfur coming into the facility. These limits are listed in the table on page 19. Compliance is indicated by limiting the available sulfur to less than 5 LTons/day.

**Compliance and Performance Test Methods and Procedures:**

To demonstrate compliance with the emissions standards for the thermal oxidizer, the following requirements must be met:

- Each sour gas stream must be tested for $H_2S$ using the Tutwiler procedures found in §60.648 OR the chromatographic analysis procedures found in ASTM E-260 OR the stain tube procedures found in GPA 2377-86 or those provided by the stain tube manufacturer.

**Emissions Monitoring:**

The inlet feed volume and sulfur content shall be monitored with a system capable of continuously measuring and recording the flow rate and/or the parameters utilized for flow rate calculations along with its sulfur content.

Each sour gas stream shall be tested for $H_2S$ at least once every month.

**Recordkeeping and Reporting Requirements:**

The following monthly records should be maintained for the thermal oxidizer: deviations from the permit requirements, volume of sour gas burned, sour gas $H_2S$ content, hours of operation, daily available sulfur, and $SO_2$ emissions.

A Periodic Monitoring Report (PMR) that identifies each incidence of a deviation from a permit term or condition shall be prepared and submitted to the Department semi-annually on a calendar basis. The reports shall be received within 30 days of the end of the reporting period.

## ADEM Admin. Code r. 335-3-14-.04, "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

There are currently no PSD limits on the SRU or thermal oxidizer.

**FEDERAL REGULATIONS**

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

## 40 CFR Part 60 Subpart LLL, *"Standards of Performance for $SO_2$ Emissions from Onshore Natural Gas Processing" [NSPS LLL]*

**Applicability:**

This facility was equipped with a sweetening unit followed by a sulfur recovery unit (SRU) prior to the January 20, 1984 compliance date for this regulation. Although the SRU was removed, no major modifications have been made to the sweetening unit since its construction. Therefore, the facility would not be subject to the requirements of this subpart.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

The thermal oxidizer is used to control $SO_2$ emissions is utilized as a control device to burn gas containing greater than 0.10 grains of $H_2S$/Scf.

The requirement to burn off gases is considered to be a work practice and not an emission limitation. As defined in the CAM regulation, an emission limitation may be expressed in the form of a work practice, process parameter, or other form of specific design. Thus CAM is applicable and shall be utilized to insure compliance with the requirement to burn the off gases.

### Emission Standards:

Send all gas containing greater than 0.10 grains of $H_2S$/scf to the thermal oxidizer to be burned.

### Compliance and Performance Test Methods and Procedures:

Compliance with the emission standard shall be demonstrated by maintaining the thermal oxidizer firebox temperature at greater than or equal 900°F or the firebox temperature utilized during the latest stack test which indicated compliance.

### Emissions Monitoring:

The firebox temperature will be monitored continuously with a thermocouple or equivalent device.

### Recordkeeping and Reporting Requirements:

A daily record of the firebox temperature and any deviations shall be maintained.

## THERMAL OXIDIZER ACTUAL EMISSIONS

| TO ACTUAL EMISSIONS (2016) | | | | | | |
|---|---|---|---|---|---|---|
| EMISSION SOURCE | (TPY) | | | | | |
| | PM | $SO_2$ | $NO_X$ | CO | VOC | TOTAL HAP |
| TO | 0.12 | 161 | 1.70 | 1.43 | 0.15 | 2.02 |

# FLARE REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| Main Facility Flare (FF) and Back-up Facility Flare (BFF) | $H_2S$ | Burn gas with 0.10 grains/Scf<br>Offsite Concentration less than 20 ppbv | Rule 335-3-5-.03(2) |
| @ Available Sulfur <= 5 Long Tons/Day | $SO_2$ | No Limit | Rule 335-3-5-.03(3) |
| | Opacity | No visible emissions except for 5 consecutive minutes in a 2 hour averaging period. | 40 CFR 60.18(c)(1)<br>40 CFR 60.633(g)<br>40 CFR 63.11(b)(4)<br>40 CFR 63.772(e)(2) |

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-4-.01(1)(a) and (b), *"Visible Emissions" for Control of Particulate Emissions*

**Applicability:**

The flare would be subject to the requirements of these regulations. However, the flare is required to meet more stringent federal opacity standards because it is used to comply with 40 CFR part 60, subpart KKK and 40 CFR part 63, subpart HH.

### ADEM Admin. Code r. 335-3-5-.03 (1), (2) and (3), *"Petroleum Production" for Control of Sulfur Compound Emissions*

**Applicability:**

The facility flare would be subject to the requirements of these regulations since the facility handles natural gas that contains more than 0.10 grains of $H_2S$ per standard cubic foot (SCF) (~160 ppmv).

**Emissions Standards:**

ADEM Admin. Code r. 335-3-5-.03(2) requires that all process gas streams containing greater than 0.10 grains/Scf of $H_2S$ shall be burned such that the offsite $H_2S$ concentration is 20 ppbv or less, as averaged over a 30-minute period. The flare is used to comply with this regulation; therefore, the $H_2S$ feed rate to the flare must be maintained at or below 500 lbs/hr. The feed rate is used as an indicator to show that compliance with the offsite concentration is being met.

ADEM Admin. Code r. 335-3-5-.03(3) requires that $SO_2$ emissions from a facility that is designed to dispose of or process natural gas containing more than 0.10 grains/Scf of $H_2S$ do not exceed the allowable limit based on the available sulfur coming into the facility. Provided available sulfur is equal to or less than 5 long tons per day, there is no limit on sulfur dioxide emissions.

**Compliance and Performance Test Methods and Procedures:**

To demonstrate compliance with the emissions standards for the thermal oxidizer, the following requirements must be met:

- Each process gas stream sent to the flare must be tested for $H_2S$ using the Tutwiler procedures found in §60.648 OR the chromatographic analysis procedures found in ASTM E-260 OR the stain tube procedures found in GPA 2377-86 or those provided by the stain tube manufacturer.
- Each process gas stream sent to the flare must be analyzed for its volatile organic compound weight percent, Btu heat content, and molecular weight utilizing ASTM Analysis Method D1826-77 or chromatographic analysis procedures found in 40 CFR part 60, appendix A, Method 18 or equivalent methods and procedures.

**Emissions Monitoring:**

A sample must be collected no less than once every month to determine the $H_2S$ concentration of any gas stream that may be sent to the flare. To determine the $H_2S$ feed rate to the flare, the inlet feed volume is required to be monitored with a system capable of measuring and recording the flow rate and/or the parameters utilized for flow rate calculations or estimated utilizing material balances, computer simulations, special testing, etc.

A sample must be collected no less than once every month to determine the volatile organic compound weight percent, Btu heat content, and molecular weight of any gas stream that may be sent to the flare.

**Recordkeeping and Reporting Requirements:**

The following monthly records should be maintained for the flare: deviations from the permit requirements, each visible emission observation conducted on the flare, $H_2S$ content, VOC weight percent, Btu content, and molecular of each process stream sent to the flare, gas volume burned in the flare, daily available sulfur, stream $H_2S$ feed rate, flare $H_2S$ feed rate, flare $SO_2$ emissions, and flare operating hours.

A Periodic Monitoring Report (PMR) that identifies each incidence of a deviation from a permit term or condition shall be prepared and submitted to the Department semi-annually on a calendar basis. The reports shall be received within 30 days of the end of the reporting period.

## ADEM Admin. Code R. 335-3-14-.04, "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

There are no Anti-PSD or PSD limits on the flare at this time.

### FEDERAL REGULATIONS

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

## 40 CFR 60 Subpart A, *"General Provisions"*

**Applicability:**

The flare would be subject to the requirements of §60.18, "General control device and work practice requirements," since it is used to comply with 40 CFR part 60, subpart KKK.

**Emission Standards:**

The flare must comply with the standards defined in §60.18(c), including operating with no visible emissions, except for a 5-minute period during any consecutive 2-hour period and operating with a flame present at all times.

**Compliance and Performance Test Methods and Procedures:**

Compliance with the emission standards shall be achieved using the methods and procedures defined in §60.18(f).

**Emissions Monitoring:**

Emissions monitoring shall be in the form of conducting a visible emission observation (VEO) once daily. Each VEO should last between 15 minutes and 2 hours.

**Recordkeeping and Reporting Requirements:**

The facility must maintain a record of the duration and results of each VEO.

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)

## 40 CFR 63 Subpart A, *"General Provisions"*

**Applicability:**

The flare would be subject to the requirements of §63.11, "Control device and work practice requirements," since it is used to comply with 40 CFR part 63, subpart HH.

**Emission Standards:**

The flare must comply with the standards defined in §63.11(b), including operating with no visible emissions, except for a 5-minute period during any consecutive 2-hour period and operating with a flame present at all times.

**Compliance and Performance Test Methods and Procedures:**

Compliance with the emission standards shall be achieved using the methods and procedures defined in §63.11(b)(4).

**Emissions Monitoring:**

Emissions monitoring shall be in the form of conducting a visible emission observation (VEO) once daily. Each VEO should last between 15 minutes and 2 hours.

**Recordkeeping and Reporting Requirements:**

The facility must maintain a record of the duration and results of each VEO.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

The facility flare is utilized as a control device to burn gas containing greater than 0.10 grains of $H_2S$/Scf.

The requirement to burn off gases is considered to be a work practice and not an emission limitation. As defined in the CAM regulation, an emission limitation may be expressed in the form of a work practice, process parameter, or other form of specific design. Thus CAM is applicable and shall be utilized to insure compliance with the requirement to burn the off gases.

**Emission Standards:**

Maintain spark or flame at flare tip when gas could be routed to the flare.

**Compliance and Performance Test Methods and Procedures:**

Unless the flare is equipped with a continuous spark flame igniter or with a continuous burning pilot light that is monitored with a thermocouple or an equivalent device, daily visual inspections of the flare shall be conducted.

**Emissions Monitoring:**

The visual inspection of the flare (if required) shall be conducted daily during daylight hours to detect the presence or absence of a spark or flame at the flare tip.

**Recordkeeping and Reporting Requirements:**

A record of the date, time, observer, and results of each visual inspection of the flare shall be maintained. A record of the time, date and results of each calibration shall be maintained if a flame igniter or a thermocouple is being used. Each occurrence when a spark or flame is not

maintained at the flare tip shall be reported as a deviation. If more than six (6) deviations occur during any semi-annual reporting period, a Quality Improvement Plan (QIP) shall be developed and implemented.

Periodic monitoring reports (PMR) are required to be submitted to the Department on a semi-annual basis and it is required to include deviations reported during the semi-annual reporting period.

## FLARE ACTUAL EMISSIONS

| FLARE ACTUAL EMISSIONS (2016) | | | | | | |
|---|---|---|---|---|---|---|
| EMISSION SOURCE | (TPY) | | | | | |
| | PM | $SO_2$ | $NO_X$ | CO | VOC | TOTAL HAP |
| **Flare No. 1** | **0.16** | **1.05** | **2.16** | **1.82** | **8.15** | **0.87** |

# STORAGE VESSEL I REQUIREMENTS

| DESCRIPTION | POLLUTANT | EMISSION LIMIT | REGULATIONS |
|---|---|---|---|
| Storage Vessels I<br>CST-1<br>&<br>CST-2 | VOC | Reduce VOC emissions to atmosphere by at least 95% by weight | 40 CFR 60.110a(a)<br>40 CFR 60 Subpart Ka |

## STATE REGULATIONS

### ADEM Admin. Code r. 335-3-6-.03 and .04, "*Control of Organic Emissions"*

**Applicability:**

The tanks do not have the potential to emit greater than 100 TPY of VOC. Therefore, the tanks are not subject to the provisions of this rule [335-3-6-.01(1)(b)].

### ADEM Admin. Code R. 335-3-14-.04, "*Prevention of Significant Deterioration (PSD) Permitting*"

**Applicability:**

There are no Anti-PSD or PSD limits on the tanks at this time.

## FEDERAL REGULATIONS

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

### 40 CFR 60 Subpart A, *"General Provisions"*

**Applicability:**

Provided that the facility is subject to one of the applicable subparts found under this part, the facility shall comply with this regulation as specified in that subpart.

### 40 CFR 60 Subpart $K_a$, *"Standards of Performance for Storage Vessels for Petroleum Liquids" [NSPS $K_a$]*

**Applicability:**

This subpart applies to storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978 and prior to July 23, 1984.

The CST-1 and CST-2 condensate storage tanks were constructed in 1981. These storage tanks do not store condensate prior to custody transfer. Therefore, they do not meet the exemption found in 60.110a(b) and would be subject to the requirements of this subpart.

**Emission Standards:**

Provided that the petroleum liquid has a true vapor pressure greater than or equal to 1.5 psia (10.3 kPa) but not greater than 11.1 psia (76.6 kPa), compliance with this subpart shall be met by meeting one of the following: installing an external floating roof, installing a fixed roof with an internal floating type cover, installing a vapory recovery system, or installing a system equivalent to the previous three [40 CFR 60.112a(a)].

The facility elected to install a vapor recovery system to comply with this subpart. The vapor recovery system shall collect all VOC vapors and gases discharged from the storage vessels, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emissions to atmosphere by at least 95% by weight [40 CFR 60.112a(a)(3)].

**Compliance and Performance Test Methods and Procedures:**

The facility demonstrated compliance with this subpart by submitting the information required in 60.113a(a)(2) on or before the date when the unit was constructed.

**Emissions Monitoring:**

Since the facility elected to install a vapor recovery and return or disposal system it is exempt from having to meet the monitoring requirements specified in 60.115a(a) [40 CFR 60.115a(d)(2)].

**Recordkeeping and Reporting Requirements:**

There are no records requirements under this subpart.

## 40 CFR 64, "COMPLIANCE ASSURANCE MONITORING (CAM)"

**Applicability:**

The storage tanks have an emissions standard and are equipped with a vapor recovery unit to meet the standards. However, the uncontrolled emissions from the tanks are not expected to exceed the major source thresholds. Therefore, the storage tanks would not be subject to the requirements of this subpart.

## RECOMMENDATIONS

I recommend that Hilcorp Energy Company be issued a renewal for its Hatter's Pond Gas Production, Treating, & Processing Facility operating under MSOP No. 503-4004. My recommendation is based on the fact that the facility should be able to comply with all federal and state requirements specified in its permit.

_____ DRAFT
Jennifer Youngpeter Date
Air Division
Energy Branch
Industrial Minerals Section

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## ATTACHEMENT A:

DRAFT PROVISOS